REMARKS

Claims 1-22 are now pending in the present application. Claims 1, 10, 15, 21, and 22 are hereby amended for further clarification, as discussed below. Claims 4 and 7, are amended to correct minor typographical errors. The specification was also amended to correct minor typographical errors. No new matter has been added and no claims have been added.

Applicants have carefully studied the outstanding Office Action. The present Response is intended to be fully responsive to all points of rejection raised by the Examiner and is believed to place the application in condition for allowance. Applicant respectfully requests reconsideration and withdrawal of the Examiner's rejections in view of the foregoing amendments and following remarks.

CLAIM REJECTIONS – 35 U.S.C. § 112

Examiner has objected to claim 4 in light of use of the term "multiplayer." Claim 4 has been amended to correct the typographical error associated with this term, making the term definite to overcome objection under 35 U.S.C. § 112. Applicant respectfully requests that this objection be withdrawn in light of this amendment.

CLAIM REJECTIONS – 35 U.S.C. § 102(b)

Examiner has objected to claims 1-4, 10 and 15 under 35 U.S.C. § 102(b) as being anticipated by Lemonnier (US Patent No. 5,742,061). This rejection is respectfully traversed.

A prior art reference anticipates the claimed invention under 35 U.S.C. § 102 only if every element of a claimed invention is identically shown in that single reference, either explicitly or inherently, arranged as they are in the claims. In re Bond, 910 F.2d 831, 832, 15 U.S.P.Q.2d 1566, 1567 (Fed. Cir. 1990). It is respectfully submitted that Examiner contrary to Examiner's assertion, the cited reference does not identically disclose every element of claim 1 of the present invention.

To be arranged as in the same claim "every element of the claimed invention must be identically shown in a single reference." Diversitech Corp. v. Century Steps, Inc., 850 F.2d 675, 677 (Fed.Cir. 1988) (emphasis added). The description contained in the single prior art reference "must describe the applicant's claimed invention sufficiently to have placed a person of ordinary skill in the field of the invention in possession of it." In re Spada, 911 F.2d 705, 708 (Fed. Cir. 1990) (citing Akzo N.V. v. U.S. Int'l Trade Comm'n, 808 F.2d 1471, 1479 (Fed. Cir. 1986)). This requires that "there must be no difference between the claimed invention and the reference disclosure, as viewed by a person of ordinary skill in the field of the invention." Scripps Clinic & Research Found, v. Genentech, Inc., 927 F.2d 1565, 1576 (Fed.Cir. 1991).

All claims of the present application, its specification, and its attached drawings relate to window construction, preferred materials for manufacturing of said window and samples of embodiment. Lemonnier does not disclose, either expressly or inherently, an entrance window for a gas filled radiation detector comprised of a plastic core with electro conductive coatings on both an inner side and an outer side of the plastic core, wherein said inner side is coated with at least two kinds of metals.

Lemonnier relates to an ionizing radiation gas detector in which primary electrons resulting from the ionization of radiation by the gas are multiplied under the effect of an electric field created by means of "two electrodes located in different planes and raised to different potentials," producing a microcounter (Lemonnier, column 3, lines 15-20). As such, Lemonnier relates to the design, materials and samples of embodiments of proportional micro counters as parts of a detector of ionizing radiation. This detector also contains a window, but no part of the Patent references to its structure or properties. Even the word "window" is mentioned in the whole Patent only once, where it is disclosed that: "if the potential of the entrance window of the detector is zero volts, the cathode can be raised to few hundred volts ..." (Lemonnier, column 3, line 64 to column 4, lines 1-4). Consequently, any analysis of our Application with consideration of Lemonnier is impossible.

Examiner contends that that these strips of microcounters depicted in greater detail in figure 1B, and in different embodiments of figures 3-8, are identically equivalent to the instant application. However, the Lemonnier drawings depict an insulating layer positioned between two electrodes and containing a hole in which an electric field is created. These figures do not depict an entry window for a gas filled radiation detector, nor do they depict a high barrier plastic core film ensuring light tightness. All limitations of the claimed invention must be considered when determining patentability. In re Lowry, 32 F.3d 1579, 1582, 32 U.S.P.Q.2d 1031, 1034 (Fed. Cir. 1994). Further, anticipation focuses on whether a claim reads on the product that which a prior art reference discloses, not on what the reference broadly teaches. Kalman v. Kimberly-Clark Corp., 713 F.2d 760, 218 U.S.P.Q. 781 (Fed. Cir. 1983).

With regard to claim 1, Claim 1 has been amended to further distinguish the present application from the cited prior art. Support for this amendment is found in paragraph 29. With regard to dependent claims 2-3, Lemonnier does not disclose a high barrier plastic film of low surface density. With regard to claim 4, Examiner contends that figure 6 anticipates claim 4 of the present invention. However, figure 6 depicts:

> a microcounter plate or strip, whose microcounters are connected by anodes to external circuitry. More specifically, the plate is bonded to a support carrying the anodes of the microcounters. Each anode is connected by contact tracks to the external circuit, e.g. to an amplifier located on a support. In this embodiment, the tracks traverse the support. Moreover, as shown in FIG. 6, a power source is connected to the plate by the cathode.
>
> Lemonnier, column 5, lines 45-54.

Consequently, figure 6 does not anticipate an entrance window for a gas filled radiation detector wherein the plastic core is a high barrier, multi-layered and biaxially oriented film.

With regard to claims 10 and 15, the claims have been amended to further clarify the multi-layer structure. Support for these amendments is found in paragraph 46.

Examiner contends that Lemonnier anticipates the entrance window wherein said inner side of the plastic core comprises the multi-layer structure of the present invention. However, in addition to the above arguments, it should be noted that the multilayered structure of the instant invention is not disclosed by the cited art. First, the insulating layer is not repeated in the instant invention as depicted in the figures cited by Examiner, which merely illustrate a "superimposing of several cathode/anode spaces" increasing the counting rate of the detector (See Lemonnier, column 5, lines 22-34). Further, several of

the figures cited by the Examiner are not part of the cited reference (figures 6b, 6c, 7b and 10), making it unclear how these figures anticipate the present invention.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). As a result, there is no §102 anticipation. Therefore, Applicant respectfully requests that this rejection be withdrawn.

CLAIM REJECTIONS – 35 U.S.C. § 103 (a)

Examiner has further rejected claims 5-6, 8-9, 11-14, and 17-20 as being unpatentable over Lemmonnier based on obviousness. Applicant respectfully traverses these rejections.

When considered as a whole, Lemonnier does not suggest the desirability or obviousness to create the window structure of the current invention. First, it should be emphasized again that the cited art does not teach or disclose an improved entry window, enhancing the detection of surface contamination. The structure and properties of the Lemonnier micro counter are not applicable for use in a radiation detection window. Next, assuming that the metal-dielectric-metal structure is at issue, each Lemonnier microcounter has cathode and insulating layer portions, each with holes or openings issuing onto the anode, creating a multiplication zone (Lemonnier, column 3, lines 28-35). There is no reasonable expectation of success that a microcounter array such as that of Lemonnier would successfully perform the role of an entry window to a gas filled radiation detector. On the contrary, holes in either layer of Applicant's window would

render the window inoperable and unable to protect the plastic core from absorption of gases or water vapor. Further, the window would not be capable of the optical tightness it sets out to provide. If the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. MPEP 2143.01V (citing In re Gordon, 733 F.2d 900 (Fed. Cir. 1984)). Moreover, one skilled in the art recognizes that the metal-dielectric-metal basic structure is commonly used in the field of electronics, for instance – capacitors, resonators, etc. – and it is absolutely impossible to improve the radiation detector window using the specific features of micro detectors described by Lemonnier. "Rather than being made obvious by the reference, such modification would run counter to its teaching by rendering the apparatus inoperative." In re Schulpen, 55 C.C.P.A. 960, 390 F.2d 1009, 1013, 157 U.S.P.Q. (BNA) 52, 55 (CCPA 1968).

Further, Lemonnier teaches away from the present invention. As stated in the Applicant's disclosure, "[l]ow total surface density of the window results in low absorption of beta and alpha radiation that secures high efficiencies of detection of the mentioned types of radiation," namely surface contamination (paragraph 29 of the application). One skilled in the art would further recognize that the detector disclosed in Lemonnier, which is used to detect ionizing radiation such as alpha or beta radiation, could not be readily or successfully modified to create Applicant's entrance window. Moreover, the mere fact that the prior art could be readily modified to arrive at the claimed invention does not render the claimed invention obvious; the prior art must suggest the desirability of such a modification. In re Ochiai, 71 F.3d 1565, 1570, 37 U.S.P.Q.2d 1127, 1131 (Fed. Cir. 1996); In re Gordon, 733 F.2d 900, 903, 221 U.S.P.Q.

1125, 1127 (Fed. Cir. 1984). Lemonnier does nothing to suggest the desirability of modifying a proportional microcounter, capable of detecting ionizing radiation, into an entry window for a gas filled radiation detector capable of surface contamination detection. Merely stating that the modification would have been obvious to one of ordinary skill without identifying an incentive or motivation for making the proposed modification is insufficient to establish a prima facie case.

With regard to rejected dependent claims, it should be noted that if an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious. In Re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); MPEP 2143.03. Claim 1, for reasons discussed above, is nonobvious and not anticipated by the cited reference. Therefore, because all claims are dependent on claim 1, they are also nonobvious and novel. As such, Applicant respectfully requests that the rejections made on dependent claims 5-6, 8-9, 11-14, and 17-20 be withdrawn.

In regards to claim 5, the choice of plastic core and its thickness is not obvious. The thinner the core, the higher detector efficiency is (due to smaller absorption of radiation in the window); but on another hand, gas permeability and light transparency of the increases. In the opposite case (thick window), gas stability increases, light transparency drops (positive factors) but radiation detection efficiency decreases, especially for alpha and low energy beta radiation (negative factor). Optimization of this parameter is a complicated technical problem and cannot be solved with either "only routine skill in the art" or use of the data relevant to the optimization of thickness of plastic cores of micro counter, as in Lemonnier.

In regards to Claims 6 and 8, in electrical and electronic engineering area there are a great number of applications that use metal-dielectric-metal structure (for instance, capacitors, crystal and ceramic resonators etc.). Aluminum is used in a number of these applications. It is also known from the technical literature (technical information of Kuraray Co., Ltd.) that the presence of aluminum coatings on both sides of EVAL film decreases the permeability to oxygen in standard testing conditions by about 30 times. This is a good result for many technical applications but will not work for sealed radiation detector windows. Applicants' use of the combination of high barrier plastic core with aluminum coatings and additional heavy metal coatings as described in the present application enables the improved entry window and the allows for the achievement of sufficiently low leak rates, keeping sealed detectors operational for the period of at least 1-2 years. This result is not seen in Lemonnier and is unknown in the art. Thus, this limitation does not involve routine skill in the art nor does it render the applicants' invention obvious.

Further, in regards to Claim 5-6, 8-9, 11-14, and 17-20, all limitations of the claimed invention must be considered when determining patentability. In re Lowry, 32 F.3d 1579, 1582, 32 U.S.P.Q.2d 1031, 1034 (Fed. Cir. 1994). In comparing Lemonnier to the claimed invention to determine obviousness, limitations of the presently claimed invention may not be ignored. Lemonnier does not teach or disclose any specific set of thickness in ranges on either the metals or the insulating layer. Moreover, assuming it is proper to compare the microcounter structure of the cited art to the window structure of the instant invention, Lemonnier does not teach or disclose any pair or set of multi-layered metals on either side of its electrodes. Claims 11-14 and 17-20 depend on claims 10, and

15, respectively, as well as on independent claim 1. These claims recite an electro conductive coating on the inner side of the plastic core comprising one pair or set of metal layers. Lemonnier contains no such disclosure. As such, it is respectfully requested that the rejections of the claims be withdrawn

CLAIM REJECTIONS – 35 U.S.C. § 103 (a)

Examiner further rejects claims 7, 16, and 21-22 under 35 U.S.C. § 103 (a) as being unpatentable over Lemonnier in light of Beyne et al.,US Patent No. 5,742,061 (hereinafter "Beyne"). Applicant respectfully traverses these rejections.

Both Lemonnier and Beyne refer to counting elements. Beyne teaches a microgap sensor and a method for manufacturing same. Although detectors according Lemonnier and Beyne also contain windows, neither of the cited references refer to the windows structure and properties. As discussed above, Lemonnier contains only one reference to the window of its detector (see page 9, above). Likewise, the only window related information found in Beyne refers to substrate used as a window for entrance of electromagnetic radiation into sensor (See Beyne, Column 4, line 59+). In such a case substrate is made from glass, quartz etc. with thickness of a few hundreds of microns. The window of such a thickness absorbs all alpha radiation and the vast part of beta radiation. The thickness of the window of the present application does not exceed 14-15 μm, which ensures high detection efficiency for alpha and beta radiation.

In addition to the above arguments against obviousness in light of Lemonnier, it should be noted that the structure disclosed in Beyne would render the present invention inoperable. Figures 4A-4C of Beyne, which depict the method of manufacturing the

sensor, do not contain the same pattern as that of the present invention's window structure (metal-plastic-metal); instead, Beyne teaches a metal-polymer-metal-glass type structure, which would render Applicants' entry window structure inoperable and unfeasible. If the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. MPEP 2143.01V (citing In re Gordon, 733 F.2d 900 (Fed. Cir. 1984)).

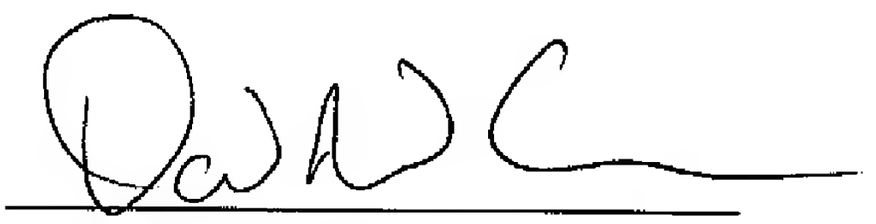
With regard to claims 21 and 22, these claims have been amended to clarify the structure and ensure proper antecedent basis. Support for these amendments is found in paragraph 39.

CONCLUSION

It is respectfully urged that the subject application is now in condition for allowance. Applicants request consideration of the application and allowance of the claims. If there are any outstanding issues that the Examiner feels may be resolved by way of a telephone conference, the Examiner is cordially invited to contact David W. Carstens or Celina M. Diaz at 972.367.2001.

The Commissioner is hereby authorized to charge any additional payments that may be due for additional claims to Deposit Account 50-0392.

Respectfully submitted,

By: 

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